The Second Annual
MHPE Summer Conference

New Paradigms for a New Century

Master of Health Professions Education Summer Conference

July 26-27, 2001
Faculty/Alumni Center, 119 CMW
Sponsored by:
Department of Medical Education

The MHPE Online Summer Conference is devoted to presentations of the work of MHPE students and alumni. This meeting provides a unique opportunity to network with other health professions educators, to learn about the educational innovations taking place in other institutions while they are still in developmental stages, and to participate in discussions tackling some of the major issues in health professions education.

Purpose: The purpose of this activity is to discuss issues and innovations in health professions education that have been spearheaded by MHPE students, faculty, and alumni.

Intended Audience: Health professions educators, including but not limited to current and former MHPE students.

Program Objectives:
At the conclusion of this program, participants should be able to:
1. Restate presented innovations in areas of medical education
2. Apply presented innovations to educational challenges in their own institutions
3. Discuss presented innovations and evidence of their effectiveness

For further information, contact: Joseph York, Assistant to the Head, Department of Medical Education, at (312) 996-3590, or by email at jyork@uic.edu, or Marcia Edison, Research Assistant Professor, Department of Medical Education, at 312-996-8073, or by email at marciae@uic.edu.

Conference Schedule for Thursday July 26

8:30 AM Continental Breakfast

9:00 AM Welcome
Marcia Edison, PhD
Conference Co-Chair

9:10 AM Introductions and Remarks:
Leslie J. Sandlow, MD
Professor and Senior Associate Dean for Medical Education

9:15 AM Opening Plenary Session

Online Learning: New Access to Quality Educational Opportunities
Burks Oakley II
Associate Vice President for Academic Affairs
Director, University of Illinois Online Initiative

10:00 AM Break

10:15 AM Paper Presentations
Moderator/ Discussant: Alan Schwartz, PhD

A Role for Error Training in Surgical Technical Skill Instruction and Evaluation
*David A. Rogers, MD, Southern Illinois University; Glenn Regehr, PhD, University of Toronto; Jeannie MacDonald,
Southern Illinois University*

Inter-rater Reliability in Judging Errors in Diagnostic Reasoning
Memoona Hasnain, MD, MHPE, PhD (cand.)

Patient Outcomes for Segmental Colon Resection According to Surgeon's Certification and Training
Jay Prystowsky, MD, MHPE

12:00 AM Lunch Break

1:30 PM Work-in-Progress Presentations
Moderator/ Discussant: Julie Goldberg, PhD

Pediatric Hospitalists: Does Full Time Improve Education?
Hilary M. Haftel, MD

A Mock Code Utilizing Video Feedback: A Teaching Tool to Enhance Physician's Self-Efficacy and Performance in
Pediatric Cardiopulmonary Resuscitation
Satid Thammasitboon, MD

A New Approach to Performance-based Assessment in Pakistan
Syeda Kauser Ali, MD, MHPE

3:00 PM Break

3:15 PM Work-in-Progress Presentations
Moderator/ Discussant: Robert Mrtek, PhD

Academic Leadership in Today's Medical Schools
Monica L. Lypson, MD

What Do Residents Want? Using Q-Methodology to Assess Internal Medicine Residents' Perceptions of Teaching and
Learning at Morning Report
Janet M. Riddle, MD

4:40 PM Poster Setup

5:00 - 6:00 PM Moderated Poster Session
Moderator/ Discussant: Joseph W. York, PhD

6:00 - 7:30 PM MHPE Graduate Recognition Ceremony and Reception

Conference Schedule for Friday July 27

8:30 AM Continental Breakfast

9:00 AM Keynote Address

Introduction
Leslie J. Sandlow, MD
Professor and Senior Associate Dean
for Medical Education

The Future of Medical Education
Arthur Elstein, PhD
Professor and Head,
Clinical Decision Making and Medical Informatics

9:45 AM Break

10:00 AM   Paper Presentations
Moderator/ Discussant: Rachel Yudkowsky, MD, MHPE

Building a New Course in Public Health for the Third-Year Students at Botucatu Medical School
Eliana Goldfarb Cyrino, MD, MHPE

History Taking Behaviors Associated with Diagnostic Competence of Medical Students: An Exploratory Study
Memoona Hasnain, MD, MHPE, PhD (cand.)

Evaluating Evidence-Based Decision Making Skills: Development and Validation of an Instrument
Alan Schwartz, PhD, University of Illinois at Chicago; Jordan Hupert, MD, University of Illinois at Chicago; Memoona Hasnain, MD, MHPE, PhD (cand.), University of Illinois at Chicago; Arthur S. Elstein, PhD, University of Illinois at Chicago; Peter Noronha, MD, University of Illinois at Chicago; Charlene Gaebeler, MD, Rush Medical; Robert J. Gillespie, MD, Rush Medical

11:30 AM Presentation Skills
Georges Bordage, MD, PhD
Professor and Director of Graduate Studies

11:45 AM Best Paper Presentations

11:50 AM Closing Remarks
Joseph W. York, PhD
Conference Co-Chair

12:00 Break

1:30 - 4:30 Institutional Review Board Training (Investigator 101)

Session I Paper Abstracts

A Role for Error Training in Surgical Technical Skill Instruction and Evaluation

David A. Rogers, MD, Southern Illinois University; Glenn Regehr, PhD, University of Toronto; Jeannie MacDonald, Southern Illinois University

ABSTRACT: <u>INTRODUCTION</u>: We have been investigating the application of computer-assisted learning to surgical skill instruction. During this series of experiments, we observed that novices, tying a two-handed square knot, committed certain errors frequently. We became interested in the possibility of using these errors to improve both technical surgical skill instruction and evaluation.
<u>OBJECTIVE</u>: Two studies were undertaken to examine the use of these errors for improving the acquisition and evaluation of this skill.
<u>METHODS</u>: Two different training videotapes were created. The "error" videotape showed examples of the four most common technical errors. The "correct" videotape showed the skill performed correctly. A testing videotape included 24 performances of the skill. In the first study, a group of 31 senior medical students were randomly assigned to one of four training groups: none, error only, correct only or both error and correct. Subjects were videotaped performing the skill before and after the training and three experts evaluated these performances independently using a 7-point rating scale. Following training, each subject rated the 24 performances on the testing videotape, and the inter-rater reliability was calculated for each group. In the second study, eight surgical faculty were randomly assigned to receive either error training or no training. Each subject viewed the testing videotape, rating the performances and giving "feedback" commentary. Inter-rater reliability for each group was assessed and faculty comments were coded as either specific or general.
<u>RESULTS</u>: T-tests revealed no significant differences in knot tying performance in either the "none" (+0.33, ns), "correct only"(-0.04, ns) or "error only"(+0.52, ns) training groups. However, significant improvement was seen in the "error+correct" training group (+0.95, p<. 01). Inter-rater reliability was not significantly different either between the four student groups (range 0.76 to 0.87) or between the two faculty groups (0.71 vs. 0.80). Faculty raters receiving error training had a higher proportion of specific comments than the group that received no training, although this difference was not statistically significant (0.88 vs. 0.72, p=. 07).
<u>CONCLUSIONS</u>: Instruction about common errors, when combined with instruction about the correct performance, enhanced the acquisition of this surgical skill. This suggests a role for the use of errors in surgical technical skill instruction. Our study provides no support for a role for error training in improving skill evaluation.

Inter-rater Reliability in Judging Errors in Diagnostic Reasoning

Memoona Hasnain, MD, MHPE; Hirotaka Onishi, MD; Arthur S.Elstein, PhD, University of Illinois at Chicago

ABSTRACT: <u>INTRODUCTION</u>: The diagnostic errors made by clinicians can cast light on the complex process of diagnostic reasoning. Inter-observer agreement that an error has occurred is essential for the scientific study of errors.
<u>OBJECTIVES</u>: The purpose of this study was to develop an instrument for categorizing errors made by clinicians in the diagnostic process and to establish inter-judge reliability.
<u>METHODS</u>: A manual was developed for coding errors in diagnostic hypotheses and plans for next steps in the workup, specifying eight possible categories. Two independent physician raters used this manual to classify errors and establish inter-rater reliability for each category. Two cases were rated. Each had been worked up by 27 physicians, as part of a larger study of computer-assisted diagnostic decision support.
<u>RESULTS</u>: High inter-judge agreement was achieved in all categories except one where the manual was not sufficiently specific and raters had to use their judgement. The kappa coefficient did not adequately reflect the level of agreement in situations where the expected and observed percent agreement are both high.
<u>CONCLUSION</u>: Independent raters can achieve good agreement in categorizing errors made by clinicians, provided they use a scoring manual and do not rely on clinical judgment. The kappa coefficient has limitations in certain cases and the use of two indices is recommended.

Patient Outcomes for Segmental Colon Resection According to Surgeon's Certification and Training

Jay B. Prystowsky, MD, Northwestern University Medical School

ABSTRACT: <u>INTRODUCTION</u> A fundamental goal of medical education is to educate trainees to provide high quality patient care. However, there is little information on patient outcomes as a function of physician's training and certification.
<u>OBJECTIVE</u>: We examined patient outcomes for colon resection to determine if they varied according to surgeon-specific factors including: 1) American Board of Surgery (ABS) certification; 2) Colorectal Surgery subspecialty certification; 3) site of residency training (university-based v. non-university-based), and 4) years of experience since ABS certification.
<u>METHODS</u>: We performed an historical cohort study at 84 non-federal Illinois hospitals with 15,427 admissions of northern Illinois residents who underwent segmental colon resection as their primary operative procedure from 1994-1997. There were 514 surgeons. Main outcomes were inpatient mortality, complications, and hospital length of stay.
<u>RESULTS</u>: After risk adjustment for age, gender, emergency admission, hospital and surgeon volume, colon pathology, and high-risk co-morbid illnesses, regression analyses showed that lack of ABS-certification was associated with significantly higher mortality and complication rates, and longer length of hospital stay. Outcomes associated with colorectal surgery certification did not differ significantly from those with ABS certification alone. Non-university-based residency training was associated with longer length of stay. Increasing years of surgeon experience were associated with lower mortality and complication rates.
<u>CONCLUSION</u>: ABS certification is a critical surgeon-specific factor for clinical outcomes of patients undergoing segmental colon resection.

Session II Work-in-Progress Abstracts

Pediatric Hospitalists: Does Full Time Improve Education?

Hilary M. Haftel, MD, University of Michigan Health System

ABSTRACT: <u>INTRODUCTION:</u> Dramatic changes have occurred in the provision of in-hospital patient care. The pressure to decrease medical costs has led to decreased length of stay, despite increases in patient acuity. Physicians whose practices have focused on outpatient medicine have found it increasingly difficult to maintain hospital-based clinical practices in addition to outpatient responsibilities. These changes have also had a significant impact on the educational experiences of students and residents, who have much less contact time with primary care providers.

In 1999, the University of Michigan Department of Pediatrics initiated a Pediatric Hospitalist program. This program was designed to provide excellent role models in the clinical care of patients, improve communication with colleagues, and improve the teaching of students and house officers. The educational roles of the hospitalist program include the following: (1) supervision of students and residents on the general inpatient service (2) supervision of students and residents on the newborn service (3) primary teaching responsibilities for students and residents on these services (4) participation in efforts to improve teaching and (5) improvement and participation in the assessment of students' and residents' performance while on these services.

<u>OBJECTIVE:</u> The underlying hypotheses of the impact of the hospitalist program on education are that pediatricians whose primary responsibility is to provide inpatient care and the supervision of trainees will be able to: 1) Spend more time in direct supervision of houseofficers and students, leading to: a) more accurate assessment of performance; b) more rapid identification of problems/deficiencies in performance; c) improved feedback to houseofficers and students regarding performance; d) identification of problems in current methods of assessment and development of new strategies. 2) Spend more time in direct teaching of students and residents, leading to: a) improvement in general pediatric inpatient teaching in both quantity and quality; b) increased time spent on bedside, rather than didactic, teaching; c) improved consistency of educational material covered during different locks. 3) Serve as role models for the development of academic inpatient general pediatrics as a career path in the future, leading to: a) increased numbers of physician trainees choosing pediatrics; b) increased numbers of pediatric residents choosing general pediatrics (inpatient or ambulatory) as a career path.

<u>METHODS:</u> A pre-intervention/post-intervention design was employed. All general and subspecialty faculty rounding on the general pediatric services in the two years prior to implementation of the Hospitalist program were surveyed regarding interactions with students, including time spent in didactic and bedside teaching, reviewing patient write-ups, and providing feedback. All third year students completing their pediatric clerkship were surveyed regarding the same interactions.

<u>RESULTS:</u> Preliminary data indicate that there has been an increase in the amount teaching time spent with the students but no increase in the amount of bedside teaching of students or in the amount of individual time spent with students.

<u>THE PROBLEM:</u> The Hospitalist program has now been in place for 18 months and it is time to develop an evaluation plan for its effectiveness in meeting its goals. What are the best methods of performing this evaluation? There was no baseline data collected regarding the educational experiences of the house officers. Is it possible to study the effects of the intervention without baseline data (or control groups) for some of the hypotheses? How can the data that has been collected be best utilized?

A Mock Code Utilizing Video Feedback: ATeaching Tool to Enhance Physician's Self-efficay and performance in Pediatric Cardiopulmonary Resuscitation

Satid Thammasitboon, MD, University of Illinois at Chicago

ABSTRACT: Proficiency in pediatric cardiopulmonary resuscitation (PCPR) is essential for all pediatric residents. The knowledge and skills in PCPR acquired from traditional training, basic life support (bls) and pediatric advanced life support (PALS) deteriorate rapidly after training. PCPR self-efficacy (a cognitive process indicating individual's confidence in his/her ability to affect the PCPR performance) also plays a significant role in this problem. Several approaches have been proposed to solve this serious problem with variable outcomes. The goal of this study is to determine the effectiveness of a teaching tool using cardiopulmonary arrest simulation (Mock code) with video feedback on resident's self-efficacy and performance in PCPR.

This is a randomized, single blind, post-test only control trial. All subjects are pediatric residents in postgraduate year II and III of the University of Illinois at Chicago. These residents have had previously been trained in BLS and PALS. The residents eligible for the study will be randomized using computer software into intervention group (IG) and control group (CG). Each IG resident will conduct a PCPR on a cardiopulmonary arrest simulation under videotaping. The videotape will be reviewed and discussed with the subject within 24 hours after the intervention. The residents will receive feedback on their performance. The CG residents will not receive the intervention during the study period.

The PCPR performance and self-efficacy will be assessed at 6 weeks after the intervention. One resident in the control group will be matched with each IG resident and assessed at the same period of time. The residents from both groups complete the PCPR self-efficacy questionnaire prior to conducting PCPR on a cardiopulmonary arrest simulation test under videotaping. The demographic information, the number of previous exposures to resuscitation, and the period of time after PALS training will be obtained for each resident. The investigator who is blinded to the intervention will review the recorded videotape and score it using the standardized PCPR checklist of assess PCPR performance on 9 resuscitation domains. The residents from both groups will receive their scores and feedback on their performance after the assessment is completed. We will recruit subjects from pediatric residents via mass e-mail. The residents who are interested in participating in this study will be informed about the study description, risks and benefits prior signing the consent. The subjects in experimental group need to spend two 20-minute sessions on intervention and assessment (total 40 minutes),while those in control group will participate in only 20-minute assessment session. The schedule for these sessions will be arranged in the most convenient time for each subject.

The result of this study will be useful for developing a teaching tool for PCPR training in addition to the traditional training (BLS and PALS) This teaching tool will enhance residents' self-confidence, knowledge and skills in PCPR, which will lead to better care for the critically ill patients.

A new approach to performance-based assessment in Pakistan

Syeda Kauser Ali, MD, College of Physicians & Surgeons Pakistan

ABSTRACT: The new method adopted "TOACS" (Task-Oriented Assessment of Clinical Skills) as a modified form of OSCE in which the stations are not only observed but interactive with an examiner questioning the candidate on the key features of the given task. It is assessed a using global scoring method. Since TOACS is being used for the first time at the CPSP, I would like to discuss/clarify psychometric issues involved and get suggestions for improvement.

Session III Work-in-Progress Abstracts

MODERN CHALLENGES IN ACADEMIC LEADERSHIP IN TODAY'S MEDICALSCHOOLS

Monica L. Lypson, MD, University of Chicago; David T. Stern, MD, PhD, University of Michigan; James O. Woolliscroft, MD, University of Michigan

ABSTRACT: PURPOSE: Academic Medical Center (AMC) leaders must respond to numerous internal and external challenges. Self reports from leaders have documented these challenges; however, little is known of the daily workings of AMC leaders and the tactics used to run an AMC in the 21st century.
METHODS: Ethnographic methods were used to explore the challenges faced by leaders in the top 3 levels of one institution's organizational chart. The study was conducted at a public midwestern school, with 1600 faculty and $165 million in NIH funding. The data are: 1)10 hrs. of interviews with leaders and 2) field notes and minutes from over 300 hrs. of participant observations in meetings. Field notes captured process (e.g. deference, control, tolerance, etc.) and content (e.g. parking, safety, and budget concerns, etc.). The team then identified themes by iterative review of field notes, with validity assessed by comparison with interview responses and subsequent member checking. This report focuses on identified content themes.
RESULTS: Six broad content domains are recurrent: 1) faculty morale; 2) business issues, e.g., intellectual property rights and establishing frameworks for joint ventures between AMCs, business and/or government; 3) developing affiliations with others to remain competetive; 4) creating plans of action to improve diversity; 5) creating tools and metrics to demonstrate "academic productivity" and assure society that graduates are competent; 6) maneuvering AMCs to adjust and survive an unpredictable environment.
CONCLUSION: AMC's are currently facing instability. This study of leaders day-to-day activities reveals challenges in 3 broad areas: A) human resources; B) institutional fiduciary roles and C) vision setting. Human resources include faculty, student and staff morale, issues of workforce diversity and assessment of "academic productivity". The institution has a fiduciary responsibility in ensuring financial stability, education and assuring graduate competency. Finally, vision setting includes the ability to adjust and survive in an unpredictable environment. Improved understanding of leadership challenges will allow better preparation of new generations of leaders, and will better prepare AMCs for future challenges.

What Do Residents Want? Using Q-Methodology to Assess Internal Medicine Residents; Perceptions of Teaching and Learning at Morning Report

Janet M. Riddle, MD, FACP; Robert A. McNutt, MD; Rush Medical College

ABSTRACT: In response to residents' requests for more morning report, the authors, in collaboration with the chief medical residents in the department of Internal Medicine, have undertaken a study to determine residents perceptions of teaching and learning at morning report. Although there are reports in the literature of Internal Medicine residents' attitudes and expectations of morning report, the goals and formats of the programs reported are unlike the conditions at our institution. These reports did not provide the information we needed to determine how to improve our morning report. This study is being conducted to better define what and how Internal Medicine residents learn at morning report.
We began with structured interviews to identify themes important to the residents. The questions addressed residents' views of 1) what they learn at morning report, 2) what they would like to learn, and 3) better ways to learn knowledge, facts and decision-making skills at morning report. Residents reported that they learned approaches to organizing thoughts and differential diagnoses and approaches to evaluation and the appropriate management of patients. Residents thought that they learned from both anecdotal and expert experience. They expressed preferences for interacting with their peers and for being questioned by the attending physician. Some residents were uncertain about the curriculum for morning report, the intended purpose for discussing cases, and the attending physician's purpose for asking specific questions. Using the items from the interviews and data from the literature, a Q-sort has been developed and is being piloted. Pilot data will be presented. Consultation is requested on the interpretation of Q-sort results and the application of findings to program improvement.

Poster Abstracts

The Development and Pilot Test of a Faculty Development Needs Assessment

Janet M. Riddle, MD, FACP*, Linnea S. Hauge, PhD*, Charlene Gaebler-Uhing, MD, MHPE*, Avery Hart, MD*, Arthur Prancan, PhD*, William F. Karnosak, MLIS*, Mark H. Gelula, PhD✖, Philip R. Liebson, MD*, Joan T. Zajtchuk, MD, Spec. in HAS*
*Rush Medical College, ✖UIC Department of Medical Education

ABSTRACT: OBJECTIVES: A survey was developed and tested to identify faculty members needs for programs that would help them become more effective educators, researchers, and administrators. The results of the survey would be used to assist in designing focused programs that meet faculty needs.
METHODS:Survey Development. A survey instrument was developed that addresses a broad range of faculty needs in a form that would yield a high response rate. The instrument developers used a literature-based model for domains of skills important to academic health professions faculty. The resulting Faculty Development Needs Assessment instrument is a 68-item Likert scale Scantron survey about professional/academic/lifestyle issues, organizational and management skills, research skills, and education skills. There are open-response items on perceived needs for and barriers to the use of faculty development resources. The survey also includes demographic items. A faculty development expert reviewed the survey.
Pilot Study Objectives and Methods. A pilot study was conducted in three clinical and one basic science department to 1) estimate response rate; 2) provide a trial for questionnaire items; and 3) gather preliminary data about faculty needs.
RESULTS AND CONCLUSIONS: Pilot Study Results. The pilot response rate was 38% (n=162). The pilot survey resulted in minor changes to the survey instrument, and provided important information about data collection strategies to increase response rates. Areas of faculty needs were identified preliminarily as: balancing home life with work, achieving promotion and tenure, dealing with difficult employees, writing grant proposals, research design and analysis, dealing with difficult learners, giving feedback, and using information technology in teaching. Respondents identified a need for mentoring, protected time, support staff, and computer skills and hardware.
EDUCATIONAL SIGNIFICANCE: The potential benefits of a needs assessment survey occur at the institutional, departmental and individual level. They include the possibility of enhanced performance and morale, professional development opportunities, and faculty recruitment and retention efforts.

PROFESSIONALISM: WHAT DOES IT MEAN TO THIRD YEAR MEDICAL STUDENTS?

Monica L. Lypson, M.D✖; Joshua M. Hauser ✖; ✖University of Chicago

ABSTRACT: PURPOSE: The early 1990´s sparked an interest in organized medicine to reclaim and re-evaluate how it promotes professionalism among physicians. The American Board of Internal Medicine (ABIM) launched Project Professionalism as a means to define and evaluate professionalism as a component of clinical competence. During a course (Talking Medicine) developed for third year medical students to teach humanism and professionalism, we asked students to define these concepts and use these definitions to spark small group discussion.
METHODS: At the beginning of each internal medicine clerkship we asked students to define humanism and professionalism anonymously on sheets of paper to be handed to the preceptors. We conducted a content analysis of 3 small groups´ definitions (n=14).
RESULTS: In Project Professionalism, the ABIM defines professionalism as: Altruism, Accountability, Excellence, Honor / Integrity, and Respect. The Students, however, saw a broader definition of professionalism. Themes that they identified included: 1) being a physician, student, teacher, philosopher and healer all at once; 2) doing no harm; 3) understanding that "respect for others" must include tolerance of differences as well as a focus on collegiality among practitioners at various levels of the medical hierarchy; 4) having appropriate speech, dress and emotions´- which should often be held in "check"; 5) honoring the system, but not blindly and 6) stating when a good job has been performed.
CONCLUSION: Third year medical students tend to agree broadly with the ABIM components of Professionalism. However, they focus more on tolerance of difference (e.g. race, socioeconomic status, and varying health beliefs), and the importance of collegiality and collaboration in the new environment of patient care. Their vantage point early in training allows them to look critically at the profession which they are joining and view its shortcomings and strengths. Future work will focus on how these definitions change as students progress through 3rd and 4th year and into residency.

Skills Improvement Reported by Surgical Residents Participating in a New Curricular Initiative

Marcia Edison, Ph.D., Santiago Horgan, MD, Jose Cintron, MD, Jonathan Silverstein, MD, MS, W. Scott Helton, MD; University of Illinois at Chicago.

PURPOSE: The purpose of this study was to examine surgical residents' self-reported gains in skills they acquired by participating in a new curriculum activity—weekly mandatory skills workshops conducted by surgical faculty in a state-of-the-art Minimally Invasive Surgery Center (MISC) educational lab.
BACKGROUND: In July 1999 we began developing a new curriculum that would take advantage of training opportunities available through the Center. This curriculum includes intensive, small-group workshops for all residents with faculty supervision and feedback, lectures and videotapes to illustrate specific techniques, and individualized evaluation of resident progress in technical skills. Unlike most other residency programs, each cohort of our residents (PGY-1 through PGY-5) spends a full day in the MISC lab every 5 weeks with 3 or 4 surgical faculty members in attendance.
Workshops maximize the opportunity for residents to reflect on the theory and practice of each specific skill by including a didactic session conducted by a faculty member, a free-form discussion of the topic during lunch, and skills training supervised by attending surgeons. 1999-2000 topics included Open Suturing and Surgical Techniques, Basic Laparoscopic Instrumentation and Techniques, Laparoscopic Cholecystectomy, and Laparoscopic Ventral Hernia Repair.
ANALYSIS: The feedback we received from the participants in this pilot year suggested that residents felt the training they received in the lab environment improved their performance in the OR. We sought to quantify this through the use of a survey that included a set of items for which residents assessed their own performance at the beginning and end of the academic year. Using paired t-tests to compare significant changes within groups and ANOVA to compare differences among our five resident cohorts, we found significant self-reported improvement in 7 to 10 of the skills (depending on the cohort), and we found that groups differences in self-reported ability diminished significantly between the beginning and end of the year on 9 of the 10 skills. We also surveyed faculty about resident skill levels, but results were inconclusive.
CONCLUSIONS: The results of our study suggest that the workshops may contribute to reducing skills differences among resident cohorts, particularly for laparoscopic techniques.

Poster Abstracts Continued

Using the PRECEDE Model to Structure Faculty Development that Leads to Change

Mark H. Gelula, Ph.D.;Rachel Yudkowsky, MD, MHPE: University of Illinois at Chicago

ABSTRACT: <u>INTRODUCTION</u>: PRECEDE[*] is a model used in Health Promotion. Based on work that began four decades ago it has been used extensively at the U.S. Centers for Disease Prevention and Health Promotion, the Centers for Disease Control and more recently at the university of British Columbia, where its creator, Lawrence W. Green is on faculty. Based on Epidemiology, educational theory, the social and behavioral sciences, PRECEDE is necessarily concerned with a multifactor approach.
<u>PURPOSE</u>: This poster describes the PRECEDE model in general terms, describes its recent examination in the continuing medical education outcomes literature, and describes how we have used the CME approach and taken it further to faculty development.
<u>METHOD</u>: In our early work in faculty development we became aware that there was little to suggest that the single session, episodic courses and workshops that we offered were having any lasting effects on our faculty. Systems theory seemed an appropriate perspective, but it offered no insight into process and lacked the fundamental punch of outcomes. A linear educational approach within which are several cycles of intervention and reinforcement was gradually adapted. An understanding of Kolb's[*] experiential learning model and of Schön's[*] theory of reflective practice has enhanced our process.
<u>CONCLUSIONS</u>: We believe we have a conceptual model that supports any number of types of faculty development programs that are intended to improve instruction and/or lead to individual change in practice.

Promoting Problem Representation In 2nd-Yr Medical Students:A Potential Step Toward Improved Diagnostic Performance

M. R. Nendaz, MD, MHPE University of Geneva, Switzerland& G. Bordage, MD, Ph.D.;University of Illinois at Chicago

<u>BACKGROUND</u>: Early problem representation, as mediated by abstract semantic qualifiers (SQs; e.g. "an *acute*, *recurrent*, *large*-joint *mono*-arthritis"), has been associated with better diagnostic outcomes.
<u>PURPOSE</u>: To assess the effects of an instructional intervention on promoting problem representation and prototypical differential diagnoses among second-year medical students.
<u>SUBJECTS</u>: 60 2nd-year medical students, during 8 months of the Essentials of Clinical Medicine course (using SP-based workshops), were assigned to an experimental (n=20) or control group (n=40).
<u>INTERVENTION</u>: During case discussions, the experimental students were trained to transform key patient findings into SQs and to use the SQs to compare and contrast a limited number of prototypical diagnostic hypotheses.
<u>OUTCOMES</u>: At the end of the term, all students were assessed using an SP followed by two written post-encounter questionnaires and a short write-up asking them to summarize the case and to rank and justify their hypotheses.
<u>RESULTS</u>- Experimental subjects used over twice as many SQs in their summaries than the controls (1.40 vs. 0.63, p = 0.006).
- Diagnostic accuracy and number of SQs in the complete write-ups did not differ significantly between groups.
- Those with the correct diagnosis used twice as many SQs than those with an inaccurate diagnosis (p=.02).
<u>CONCLUSIONS</u>: Promoting early problem representation by using SQs was successful using a short instructional intervention. Data interpretation and diagnostic accuracy would require additional instructional efforts such as more frequent and intense instructional contacts and better integration of content knowledge. When assessing educational efficacy, certain methodological difficulties, such as statistical power and sensitivity of the outcome measures, require special attention.

META-ANALYSIS OF THE EFFECT OF MEDICAL SCHOOL STRATEGIES ON PRIMARY CARE CHOICE BY MEDICAL STUDENTS

Joseph William York, Ph.D., University of Illinois at Chicago

Medical school interventions identified in the literature as being effective in increasing medical student interest and choice of primary care specialties were examined using meta-analysis to determine effect sizes and association with predictor variables.

An analysis of 52 published reports describing medical school interventions to increase primary care interest and career choice by medical students identified ten interventions that were grouped into categories of mentorship, clerkship, and curricular programs. All ten interventions yielded statistically significant, positive effect sizes ranging from 1.178 to 0.148. Average effect size for all studies was 0.766. The effect sizes also showed a large degree of heterogeneity, suggesting that they may be associated with variability of predictors. Investigation of various predictors showed that effect sizes were positively associated with a number of predictors such as the number of schools in the study and public school ownership. High proportions of graduates in primary care fields, and lower levels of research funding, also were associated with higher effect sizes. The year in which the study took place showed variable and inconsistent relationships with effect sizes. Program choice was higher when all specialties were considered versus any single specialty. This study also looked at different quality indicators for the studies cited. While higher effect sizes were associated with experimental designs considered higher in validity, overall quality standards were found to be negatively correlated with effect size, although actual correlation coefficients were small.

The effect sizes for the various interventions were used to estimate their potential impact on increasing numbers of primary care physicians. The range of predicted increases vary from 4% to 8%. The implications of these findings are that medical school interventions by themselves will not provide enough additional primary care physicians by themselves to meet national policy goals. However, further study is needed to determine whether combining these programs with recruitment policies that favor students with primary care interest would make a larger contribution that the interventions alone.

Poster Abstracts Continued

MHPE Graduate Recognition Ceremony
Thursday, July 26, 2001 at 6:00 PM

Welcome and Introduction of Dean Bailie: Leslie J. Sandlow, MD

Greetings: Michael D Bailie, MD, PhD, Vice Dean, College of Medicine

Introduction of Dean Hulse: Leslie J. Sandlow, MD

Remarks: Clark Hulse, PhD, Dean, Graduate College

Graduates and Advisors:

Rachel Yudkowsky; Summer 2000; Thesis◈ *What Determines the Quality of Psychaitry Residency Programs? Opinions of the Training Directors and Faculty*: ◈ Advisor: Alan Schwartz, PhD◈

Fatima Adriana D'Almeida; Summer 2001; Project◈A Fifth Year Evidence-Based Primary Care Module during the Adult Health Clerkship at Marilia Medical School: ◈ Advisor: Alan Schwartz, PhD◈

Pedro Alejandro Gordon; Summer 2001; Project◈ Leadership and Management in the Change Process of a New Medicine Curriculum in Londrina: The Dean's Perspective: ◈ Advisor: Alan Schwartz, PhD◈

Lidia Raquel De Carvallho; Summer 2001; Project◈ Teaching Biostatistics in Brazilian Medical Schools: Characteristics and Challenges: ◈ Advisor: Arthur Elstein, PhD◈

Eliana Goldfarb Cyrino; Spring 2001; Project◈ Building a new course in Public Health for the third-year students at Botucatu Medical School:◈ Advisor: Michael Seefeldt, PhD◈

Rita Paisarntantiwong; Summer 2000; Project◈ Perceptions of Thai Medical Students About Problem-Based Learning and Lecture-Based Learning Methods: ◈ Advisor: Michael Seefeldt, PhD◈

Shivaprasad S Goudar; Summer 2001; Project◈ Evaluating Implementation of Restructured Integrated Basic Science Curriculum at JNMC, Belgaum, India: ◈ Advisor: Michael Seefeldt, PhD◈

Hassan El-Shatoury; Summer 2001; Projec*t*◈ Reforming the Neurological Surgery Residency Training Program at Suez Canal University: ◈ Advisor: Michael Seefeldt, PhD◈

Jeanne Drouin, Fall 2000; Project◈ An Evaluation of Faculty Developmetn Interventions for Francophone PBL Tutors at the University of Ottawa: ◈ Advisor: Ara Tekian; PhD◈

Kenneth Leslie; Fall 2000; Project◈ Developing a Communication Skills Curriculum and Teaching Manual for First-Year Surgical Residents: ◈ Advisor: Mark Gelula; PhD◈

Wlodzimierz Michal Wisniewski; Spring 2001; Project◈ Development of a workshop to improve teaching skills among senior residents at UIC: ◈ Advisor: Mark Gelula; PhD◈

Jana Reed Marogil; Summer 2000; Thesis◈ Preparation for the Physical Therapist to Physical Therapist Assistant Relationship: ◈ Advisor: Mark Gelula; PhD◈

Ricardo Tapajos M C Pereira; Spring 2000; Project◈ Teaching and Learning in Medical Humanities: Designing an Elective Course on HIV/ AIDS in the Visual Arts: ◈ Advisor: Suzanne Poirier; PhD◈

Memoona Hasnain; Fall 2000; Thesis◈ Are Medical Students' History-Taking Behaviors an Indicator of Their Diagnostic Competence?: ◈ Advisor: Georges Bordage; MD, PhD◈

Jay B. Prystowsky; Fall 2000; Thesis◈ Patient Outcomes for Segmental Colon Resection According to Surgeon's Certification and Training: ◈ Advisor: *Georges Bordage*; MD, PhD◈

Eric Jacobsohn; Spring 2001; Thesis◈ Teaching Oral Examination Skills to Anesthesia Residents: Effect on Graders and Self-Assessment Scores:: ◈ Advisor: *Georges Bordage*; MD, PhD◈

Mari Elisabeth Egan; Spring 2001; Thesis◈ Soliciting Feedback By Asking Questions That Promote Thinking Among Medical Students: A Pilot Study: ◈ Advisor: *Georges Bordage*; MD, PhD◈

Jesus R. Guajardo; Summer 2000; Projec*t*◈ Clinical Diagnosis of Otitis Medial Using Computer-Assisted Instruction: A Randomized Post-test Only Control Group Study: ◈ Advisor: *Georges Bordage*; MD, PhD◈

Remarks by the Director of Graduate Studies: Dr. Georges Bordage, MD, PhD

Closing: Leslie J. Sandlow, MD

Session IV Paper Abstracts

Building a new course in Public Health for the third-year students at Botucatu Medical School

Eliana Cyrino, MD, MHPE; Marillia Medical School-Brazil

ABSTRACT: INTRODUCTION: In 1997, a new curriculum was implemented at Botucatu Medical School. The various disciplines in the Department of Public Health (DPH) have been undergoing restructuring to better integrate some of those into the new curriculum. Since 1998, a group of DPH professors has been preparing a new course, Collective Health III, to be taught during the third year. It includes: Epidemiology, Nutrition, Social Science, Ethics, and Public Health Administration. This course was first offered in 1999. The course was divided in three modules:Problems in Public Health, Nutrition in Public Health, and Planning in Public Health. It was organized according to themes, developed collectively. The course methodology was developed according to around problems in Public Health and most often students would work in small groups supervised by an instructor in class, in Health Services or in Health Centers.
OBJECTIVES: The purpose of this project was to describe and analyze a one-year pilot course in Public Health involving faculty members from five integrated disciplines, that is: Nutrition, Administration in Public Health, Social Science, Ethics, and Epidemiology.
DESIGN: Data used included the course syllabus, actual diary records of the course schedule, questionnaire data from students who evaluated each module of the course in terms of educational quality and teaching effectiveness, an end-of-course qualitative evaluation from students and a faculty qualitative self evaluation .
OUTCOMES: A modified instrument was used: Students' Evaluation of Educational Quality. At the end of each module, all 81 students were asked to assess the course on a five-point scale (from very poor to very good) concerning: learning and value; instructors' enthusiasm; organization; group interaction; content and general aspects of the course. At the end of the course all students and faculty were asked to answer an open-ended questionnaire.
RESULTS:Two-thirds of the students rated their learning and understanding of the subject matter as good; Two-thirds thought the degree of enthusiasm shown by course instructors and professors was good to very good. Concerning group interaction, three fourths felt it was good to very good; students were encouraged to participate in class discussions.Overall the first module was the best according to the students. Students and faculty valued the method of the course and the opportunity to work in groups. Faculty substitution during the course was considered a problem because new professors were not fully trained; this occured more often than planned.
CONCLUSION: This course was favorably evaluated by both students and faculty. This could help medical students to understand Public Health work and its specificities. The positive results of this course may encourage the faculty to continue working on the curriculum reform, not only in Public Health but also in the Medical School curriculum of as a whole.

History-Taking Behaviors Associated with Diagnostic Competence of Medical Students:An Exploratory Study

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ABSTRACT: INTRODUCTION: Good history taking is the corner stone of clinical reasoning. There is a need to identify the strengths and limitations in medical students' history-taking behaviors in order to enhance their clinical reasoning and diagnostic competence.
OBJECTIVES: The purpose of this study was to identify history-taking behaviors that are associated with various levels of diagnostic competence among medical students.
METHODS: An instrument to assess 16 history-taking behaviors was prepared resulting into 24 distinct variables. Data were analyzed to determine the relationship between medical students' history-taking behaviors and four measures of diagnostic competence. Videotapes of 17 clerks seeing a standardized patient were analyzed to determine the relationship between 24 (predictor) history-taking behaviors and four criterion measures of diagnostic competence (semantic competence and global ratings of diagnostic competence, clinical reasoning, and knowledge). Inter-rater reliability was established using two independent raters.
RESULTS: Four behaviors were more frequently associated with semantically-driven discourses or high global ratings: thoroughness of exploration of the chief complaint; asking questions in close proximity, within a line of reasoning; clarifying patient information; and summarizing information. Four behaviors were associated with symptom-driven discourses or low global ratings: repeating questions unnecessarily; inquiring about systems or past history during the first minutes; and changing topic before completing a line of inquiry.
CONCLUSION: The striking differences found between a number of history-taking behaviors and the semantic classes and also the correlations seen between history-taking behaviors and measures of clinical competence suggest that certain history-taking behaviors are predictors of medical students' diagnostic competence. These findings provide direction for future research and emphasize the need to reinforce certain positive behaviors while correcting others with negative outcomes.

Evaluating Evidence-Based Decision Making Skills: Development and Validation of an Instrument

Alan Schwartz, PhD, University of Illinois at Chicago; Jordan Hupert, MD, University of Illinois at Chicago; Memoona Hasnain, MD, MHPE, PhD (cand.), University of Illinois at Chicago; Arthur S. Elstein, PhD, University of Illinois at Chicago; Peter Noronha, MD, University of Illinois at Chicago; Charlene Gaebeler, MD, Rush Medical; Robert J. Gillespie, MD, Rush Medical

ABSTRACT: BACKGROUND: Evidence-based medicine (EBM) has become an important component of Pediatrics residency training. However, few validated instruments assess the ability of a resident to correctly apply research evidence to a clinical decision.
OBJECTIVE: The goal of this study was to develop and validate test items to measure The EBM skill of applying research evidence to clinical decision problems in Pediatrics.
DESIGN/METHODS: The assessment uses a Bayesian approach to information. Each item presents a brief case vignette and asks respondents to make a clinical decision and state their confidence in the decision. Respondents next read a structured abstract (adapted from the literature) and again make the choice and indicate their confidence. Items are scored by whether decision (or confidence in decision) shifts in the direction favored by the evidence. Twelve test items were developed, varying in type of problem (diagnosis, therapy, or prognosis), evidence validity (low vs. high), and evidence direction (favoring vs. not favoring intervention). In a non-equivalent control group trial, four items were presented to first-year Pediatrics residents before or after month-long inpatient rotations that did or did not include EBM training.
RESULTS: Among the 12 items, logistic regression found that those that had high-validity evidence, or that focused on therapeutic or diagnostic questions, were significantly more likely to be correctly answered (OR=2.1, 4.3, 2.3, respectively). In the controlled trial, pre-rotation scores did not depend on whether the rotation contained. EBM (C2=2.18, ns, n=98). Post-rotation scores, however, were better when the rotation contained EBM training (C2=5.15, Fisher's exact test p < .05, n=74).
CONCLUSIONS: Our test items appear to provide valid measures of the ability to evaluate research evidence and apply it to a clinical decision. These assessments might be used to determine an individual physician's skills or to evaluate learner outcomes of an EBM educational program.